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**Alano et al.**

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(54) **MIXER WITH SWIRL BOX FOR A VEHICLE EXHAUST SYSTEM**

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**ABSTRACT**

A vehicle exhaust system includes a mixer and a doser that sprays a reducing agent into the mixer to be thoroughly mixed with engine exhaust gases prior to introduction of the mixture into a downstream exhaust component. The mixer includes an upstream baffle with at least one inlet opening and a downstream baffle with at least one outlet opening. An outer peripheral wall surrounds the upstream and downstream baffle and includes a doser opening. A doser is mounted at the doser opening and is configured to spray a reducing agent into an area between the upstream and downstream baffles. A deflector is positioned between the inlet opening and the doser opening to protect spray at the doser opening from direct impact with exhaust gas from the inlet opening, and an impactor is positioned adjacent the deflector and faces the doser opening.

**19 Claims, 10 Drawing Sheets**

